

Environment Agency Report to the Dungeness Site Stakeholder Group

October 2022

Introduction

This report covers our regulation of Dungeness A and B Sites and related environmental matters for the period May 2022 to October 2022.

The Environment Agency's priority remains to protect people and the environment. We have set out how we are doing this across the many areas we regulate, and on which we provide advice and guidance. For example, flood defence, flood warning, environmental sampling, permitting, angling and fisheries, waterways management and billing. Please see our page on GOV.UK (www.gov.uk/government/organisations/environment-agency).

Radioactive Substances Regulation

We regulate radioactive waste disposals through environmental permits that contain limits and conditions aimed at minimising wastes and protecting the environment. We check compliance with the permit by undertaking regular inspections. These are recorded on Compliance Assessment Reports which detail our inspections and any non-compliance(s) found.

On 17th May 2022, we carried out an inspection at Dungeness A (DNA) on asset management and surveillance of equipment. On 9th August 2022, we conducted an inspection on environmental awareness.

On 28th June 2022, we carried out an inspection of the Dungeness B (DNB) Environmental Monitoring Programme (EMP). On 31st August 2022, we conducted a Discharges Review inspection at DNB.

We also maintain regular contact with the sites by remote means in addition to formal correspondence and site visits.

Site Regulation

Dungeness A

We are in regular contact, several times during the month with Senior Managers at Dungeness A to ensure that we are kept in touch with progress on decommissioning, progress on actions and recommendations and any emerging issues at the site.

Inspections:

Following our May inspection, we concluded that generally, the arrangements for asset management have continued to improve and mature. However, issues at site have indicated that some further improvements are required, particularly in relation to surveillance to ensure equipment is operating as it should. The Operator accepted this and will continue to improve asset management and surveillance of assets at site. We will continue our liaison on these topics going forward.

During our visit to site in August, we interviewed members of site the lead team to get a view of their understanding of environmental awareness and how they can improve environmental issues in their departments. We identified variability in the depth of awareness of environmental issues among the lead team and we have made some recommendations to the Operator to carry on improving as part of their ongoing environmental improvement project. We will continue to support their environmental awareness and improvement programme (also see below in “Environmental Events”).

Aqueous waste discharges and the MAETP.

We were notified by the Operator that their BAT (best available techniques) assessment had concluded that the MAETP (Modular Active Effluent Treatment Plant) would now not be required due to a reduction in anticipated throughput of aqueous waste owing to the discharge of reactor void water to surface water drains (see below). Magnox have concluded that off-site disposal is now the preferred option. We have not received the BAT assessment yet. We will review it following receipt. We expect the BAT to consider all sources of aqueous wastes.

We have asked for a meeting with the Operator to discuss this and the changes in the strategy for aqueous waste. We have also asked the Operator to carry out a review as to what lessons can be learnt from building this plant and not using it.

Reactor void water

Our national permitting service (NPS) issued a variation in December 2021 to the Operator’s water discharge permit to allow water from the turbine hall voids to be discharged to sea and for the aqueous waste originating from the reactor voids to enter a discharge route direct to the surface water drains. The radioactive properties of these discharges were already covered under the radioactive substances regulation (RSR) permit. Diverting aqueous waste from the active effluent water treatment plant (AEWTP) will allow the AEWTP to undergo decommissioning activities.

We asked the Operator to identify appropriate environmental performance indicators and performance criteria to monitor this discharge.

The Operator did not initially discharge aqueous waste direct to surface water drains (although this is the final aim) but to bowzers where it could be analysed for radioactivity and non-radioactive parameters. The Operator has observed some particulate and oil in some of the waste bowzers. As a result of this, the waste is now being processed through the AEWTP again until the Operator can be sure there is minimal particulate (the Operator must minimise particulate in aqueous waste under their RSR permit) and no oil (the water discharge permit does not allow discharges with visible oil or grease) in any discharge. We are content that the discharges to surface water drains have been compliant with the permit so far, but we will be talking with the Operator about these issues as part of the surveillance and the holistic view of aqueous waste going forward.

Engagement with the Operator regarding the turbine hall void.

We are still liaising with the Operator regarding the material that is to be used to fill in the turbine hall void.

Water has now been pumped out from the culverts. We reviewed a risk assessment provided by the Operator looking at infilling materials for the culverts. We are content with this risk assessment.

Environmental events.

In addition to the non-compliance given to the Operator relating to issues with sampling from the advanced vacuum drying system plant (see below in “Enforcement”), we have some concerns about the number of environmental events at site. We are awaiting actual and root cause investigations focussing on two events:

- Effluent flowing from a blockage through the Magnox dissolution plant and into the surface water drains in an uncontrolled manner. A small amount of very low activity effluent liquid was released to surface water drains.
- How a software change to bag monitors was found to have an error in the alarm thresholds for some material types that could have resulted in incorrect activity assessments. No waste left site.

We will consider whether any enforcement response is required when we have received Magnox’s investigations

Joint EA/ONR meetings with the Operator.

We have remote monthly regulatory meetings with the Operator and ONR. We discuss COVID issues, significant events and learning over the previous month, a brief update on projects/programmes and upcoming Regulator inspections.

On a quarterly basis we have larger strategic meetings (last 6th July and 17th October 2022) where we discuss future strategies/lifetime plans for the site, waste projects and decommissioning topics.

Other issues.

We continue to provide advice and guidance to the Operator on further characterisation to support disposability of pond skips held in on-site storage (as previously reported to the SSG). Magnox are still developing their sampling strategy.

We continue to provide advice and guidance to Magnox on their plans for using the GRR (Management of radioactive waste from decommissioning of nuclear sites: Guidance on Requirements for Release from Radioactive Substances Regulation, <https://www.sepa.org.uk/media/365893/2018-07-17-grr-publication-v1-0.pdf>). We have asked for an update meeting. The Operator has until the end of 2023 to complete their waste management plan and site wide environmental safety case.

We have commented on the Kent County Council (KCC) minerals and waste plan. KCC have introduced sections in the waste plan that include the GRR. In June 2022 we held a meeting with KCC. This meeting included the Environment Agency area groundwater and contaminated land technical specialist and the planning specialist in the local sustainable places team. We answered some queries that KCC raised.

On 31st May 2022 we attended a meeting with Magnox concerning the use of the LLWR (low-level waste repository) waste framework and how this ensures disposal of solid radioactive waste is optimised as required by their RSR permit. Magnox accept that further work needs to be done on this to ensure they remain compliant with their permit conditions.

The Operator has submitted a planning application for the erection of 3 buildings to be used to relocate waste management facilities for the packaging and temporary storage of radioactive waste, together with enabling works at site. We provided comments on this development to KCC. The Operator is planning to apply for an RSR permit variation to cover the aqueous and gaseous discharges from these facilities.

We have asked the Operator to review their arrangements for fire water in case of a fire at site. This is part of a fleet-wide programme to review plans for the management of fire water at all Magnox sites. We have asked the Operator to prepare a plan in conjunction with the fire brigade that minimises the impact of fire water to the environment. We have sent the Operator relevant guidance.

We reviewed a BAT assessment for the borderline wet waste project involving a waste stream which will now be removed from the project, processed as ILW and sent to Bradwell for interim storage along with other ILW wastes.

Dungeness B

Radioactive Substances Regulation

Site Inspections

On 28th June 2022, we conducted an inspection of the DNB Environmental Monitoring Programme (EMP). The purpose of the inspection was to assess adequacy of:

- i. Progress achieved against recommendations from the previous inspection
- ii. Efficiency/quality of the process for generating and verifying EMP returns
- iii. Training delivered to Environmental Safety Technicians (ESTs) involved in delivering the EMP

There were no permit non-compliances identified during the inspection. We identified some areas for improvement and made recommendations for DNB to improve efficiency of the EMP returns generation process. We also recommended DNB review the ESTs' training records and deliver appropriate training to plug any gaps identified.

On 31st August 2022, we conducted a Discharges Review inspection at DNB. The aim of the inspection was to review DNB's discharge trends/outlets to assess whether a decrease in impacts on the public as well as the environment is likely because of reduced discharges and plant operations.

We did not identify any permit non-compliances or areas for improvement during the inspection. Based on our findings, we believe that discharges (and public dose) during defueling are likely to be less significant when compared with those estimated during DNB's electricity generation period. However, we will keep discharges and annual retrospective dose assessments (during defueling) under review to enable us to identify and respond to unusual trends.

Events and Enforcement

Dungeness A.

Following a review of learning capture forms (sent to regulators on a routine basis) we were made aware that there were no samples available for beta particulate (particulate in gaseous waste that emits beta radiation) activity from 23rd April until the 3rd of May 2022 for gaseous discharges from the advanced vacuum drying system (AVDS). Radioactive waste is dried in containers before transfer to Bradwell for interim storage in this facility.

The air sample filter paper for the AVDS ventilation system should be replaced on a weekly basis. The person responsible for this task on the week in question did not replace

it when retrieving the previous weeks sample. An estimate had to be made for the period in line with previous data obtained and the condition of the plant at the time.

Because of this, we found that the Operator was in non-compliance to 2 conditions of their RSR permit i.e., that they did not use best available techniques when taking samples to ensure compliance with their permit and that their management system was not sufficient to prevent this happening (see below). We classed these as category 4 non-compliances (our lowest classification) as there was no associated environmental impact. Our enforcement response was to give to Magnox, advice and guidance on this occasion. The breaches were 1.1.1(a) and 3.2.1(c) of RSR permit EPR/ZP3293SR.

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that is sufficient to achieve compliance with the conditions of this permit;

3.2.1 The operator shall:

(a) take samples and conduct measurements, tests, surveys, analyses and calculations to determine compliance with the conditions of this permit;

(c) use the best available techniques when taking such samples, conducting such measurements, tests, surveys, analyses and calculations, and carrying out such an environmental monitoring programme and retrospective dose assessment, unless particular techniques are specified in schedule 3 of this permit or in writing by the Environment Agency;

Dungeness B

In the last SSG report we highlighted that we identified a record keeping gap during the Solid Radioactive Waste inspection we conducted on 29th March 2022. Following our review of evidence gathered and further information from the station, we identified the following permit non-compliances:

- i. 4.1.2 – failure to retain records of the 2021 waste containment inspection reports, classified as category 4 (CCS4). This means a non-compliance that could result in an incident having no or negligible impact on people and the environment.
- ii. 1.1.1 (a) – failure to manage reports of the 2021 waste containment inspections in accordance with Local Work Instruction, classified as CCS4.

We specified the following action:

- i. Ensure the management of future waste containment inspection reports is in accordance with relevant Work Instructions.

The station complied with the action above by updating the Local Work Instruction specifying waste containment inspection frequencies, and records staff must keep to demonstrate compliance with the permit.

In August 2022, we granted written authorisation for DNB to conduct commissioning tests on a new CO₂ boiler in advance of formal application to vary its combustion permit to include the new boiler as a specified plant. The commissioning tests were necessary to demonstrate a nuclear safety function. We specified the following conditions for the commissioning tests:

- i. Duration of the tests shall not exceed 48 hours
- ii. Commissioning tests shall complete on or before 12th August 2022

- iii. Report emissions of CO, CO₂, and NO_x within one week of completing commissioning tests.

In early September 2022, the station reported that during the commissioning tests it breached test conditions i. and ii. above.

Following a compliance assessment review, we took enforcement action and served a warning letter (in October 2022) on the company (EDF Energy Nuclear Generation Ltd) in respect of the breaches of test conditions (i. and ii. above) by DNB. We will track the actions specified in the compliance assessment report issued to DNB to ensure the station returns to compliance.

Annual Review of Safety and Environment

Nothing to report.

Environmental Permitting

Dungeness A

Nothing to report.

Dungeness B

Nothing to report.

Discharge Reports

Both sites are required to report to us liquid and gaseous discharges to the environment on a monthly basis. Liquid and gaseous discharges from both Dungeness sites remain within the limits set by the Environmental Permits.

Dungeness A

Dungeness A has submitted the gaseous and liquid waste discharge returns required to be reported to us. We have reviewed the discharge returns covering the period of this report and did not identify any unusual or unexplained trends. We continue to monitor all discharge reports.

Dungeness B

Dungeness B has submitted gaseous and liquid waste discharge returns in line with requirements of the environmental permit. We have reviewed the discharge returns covering the period January to June 2022 and did not identify any unusual trends.

Environmental Monitoring

The Operators carry out monitoring of various environmental samples at periodic intervals and report the information to us. Dungeness B staff carry out the work on behalf of both sites. The programmes for the two sites are slightly different to reflect the radionuclides that are being discharged, the historical discharges and the operational activities taking place at each site.

Dungeness A and Dungeness B

Both sites submitted the Environmental Monitoring returns required to us in line with requirements of the environmental permits. We reviewed the environmental monitoring returns for the quarters covered by this report and did not identify any unusual trends.

Further information

Further information on our role in regulating the use of radioactive substances and related activities on nuclear licensed sites can be found on the Environment Agency section of the GOV.UK website (www.gov.uk/topic/environmental-management/nuclear-regulation)

The Environment Agency's Lead Regulator for the Dungeness A site is Phil Fahey. The Environment Agency's Lead Regulator for the Dungeness B site is Eddie Osondu.

Eddie and Phil are Nuclear Regulators and part of the Nuclear Regulation Group South (NRG South) based at the Environment Agency's Wallingford office in Oxfordshire.

NRG South Nuclear Regulators undertake environmental regulation of radioactive substances on nuclear licensed sites in southern England. They work closely with the local Environment Agency teams in those areas as well as external bodies such as the Office for Nuclear Regulation.

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